

## OPERATING SUMMARY

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# EMO TWP.

WATER POLLUTION CONTROL PLANT  
and WATER TREATMENT PLANT

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EMO TWP.  
WATER POLLUTION CONTROL PLANT  
and  
WATER TREATMENT PLANT

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by  
Plant Performance Unit  
TECHNICAL SERVICES BRANCH  
T. Cross, Director

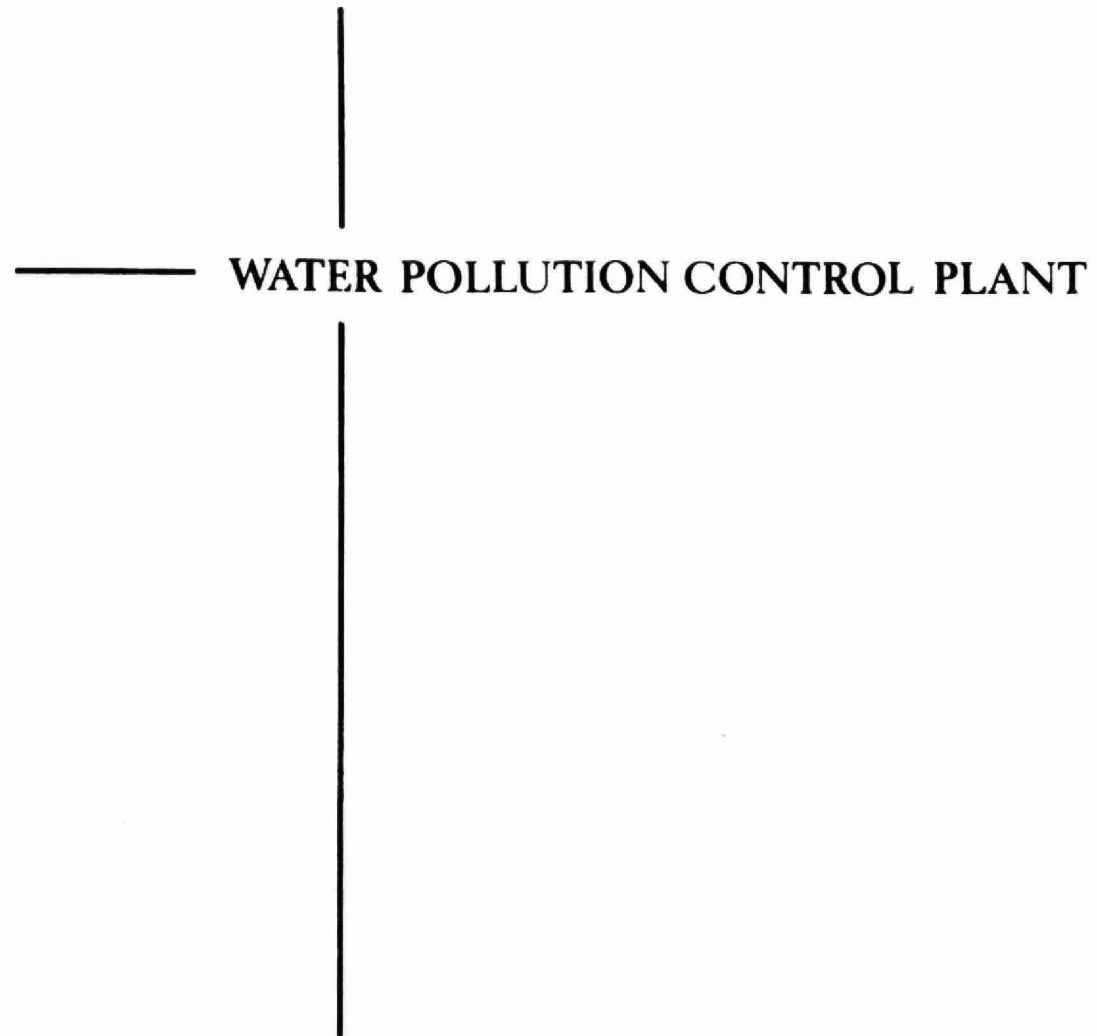
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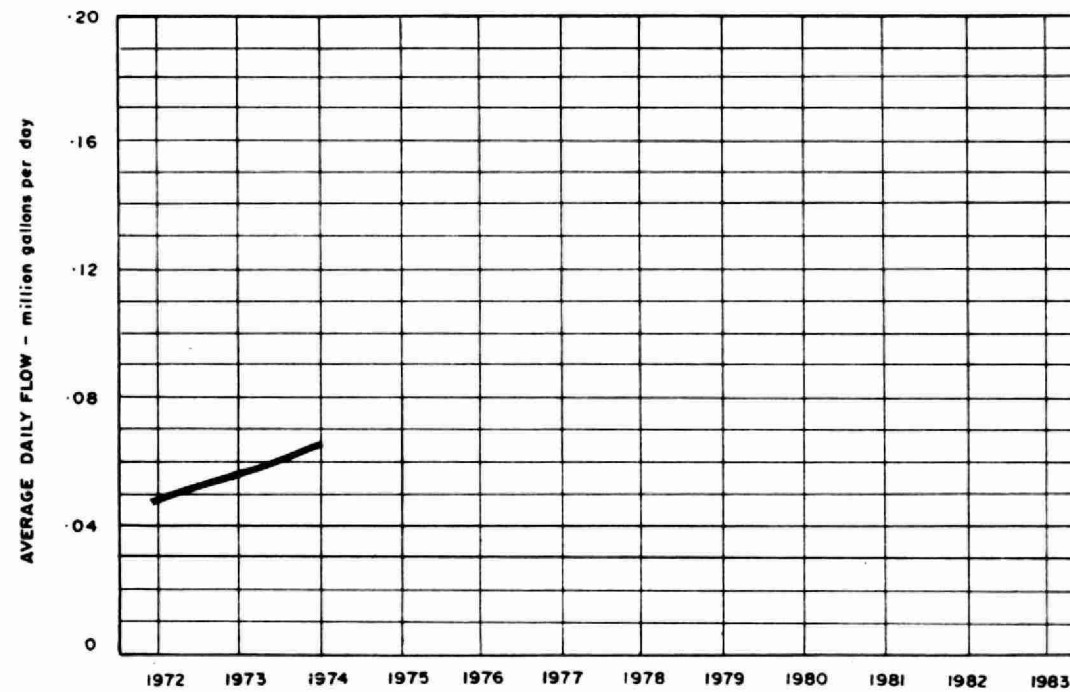
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# OPERATING EXPENDITURES

Regular Staff	\$		\$
Casual (Unclassified) Staff			
TOTAL SALARIES AND WAGES			
TOTAL EMPLOYEE BENEFITS			
TOTAL TRANSPORTATION AND COMMUNICATIONS			265
Insurance		59	
Sludge Haulage		502	
Repairs and Maintenance			
Other Services		30	
TOTAL SERVICES			591
Machinery and Equipment		150	
Chemicals			
Utilities		2340	
Other Supplies and Equipment		211	
TOTAL SUPPLIES AND EQUIPMENT			2701
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS			
TOTAL TRANSFER PAYMENTS			
OTHER TRANSACTIONS			87
GRAND TOTAL	GRAND TOTAL	\$	3644

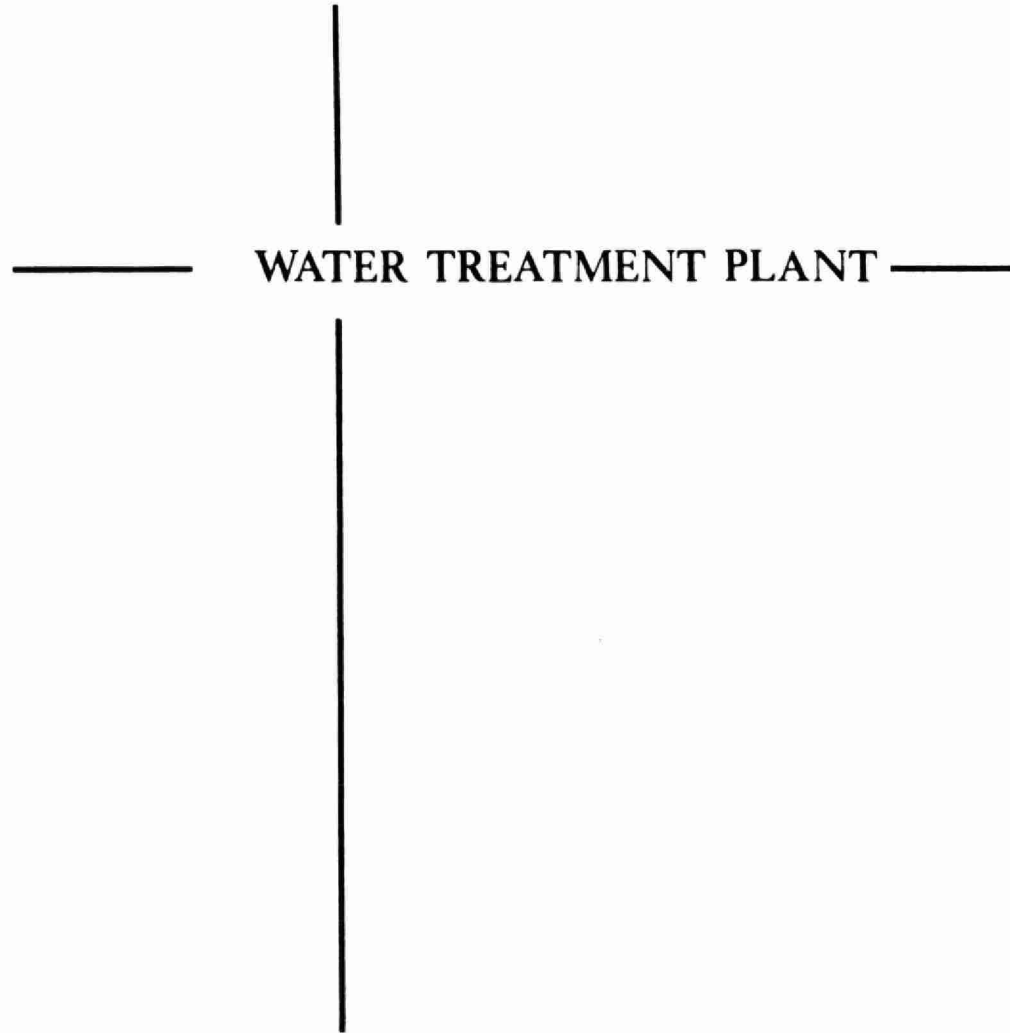
# PROCESS DATA FLOWS



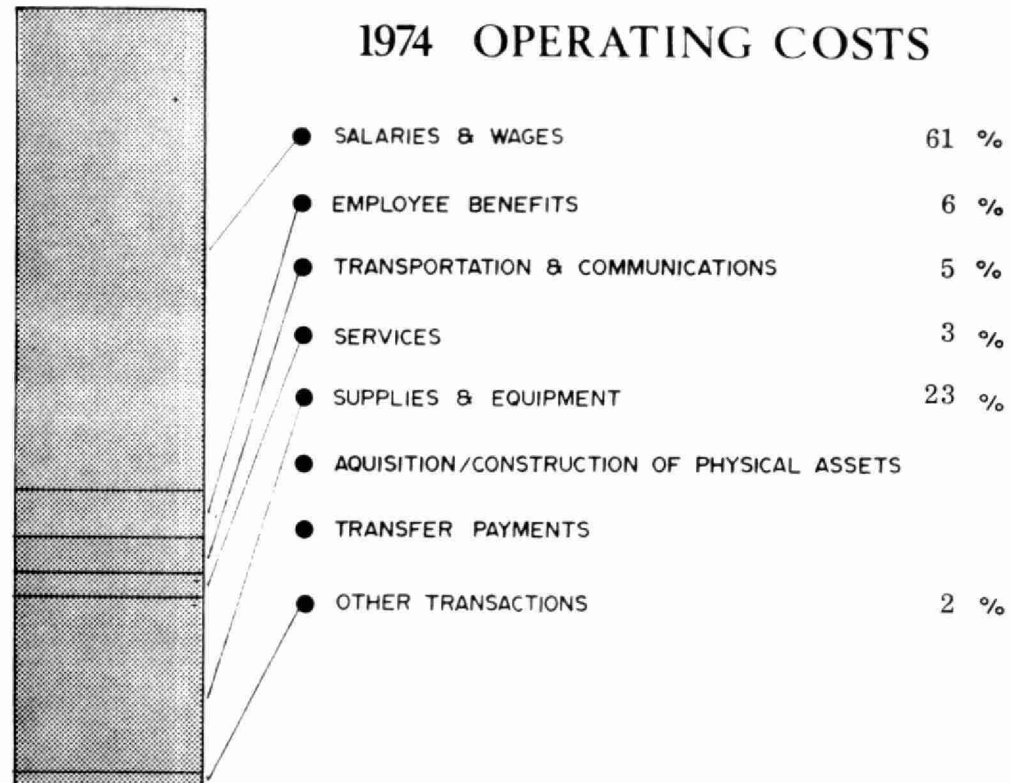
## PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND			SUSPENDED SOLIDS			PHOSPHORUS	
	TOTAL FLOW million gallons	AVERAGE DAY mil. gal	MAXIMUM DAY mgd	INFLUENT mg/l	EFFLUENT mg/l	LOADING pounds/acre/day	INFLUENT mg/l	EFFLUENT mg/l		INFLUENT mg/l P	EFFLUENT mg/l P
JAN	1.46	.047					580				
FEB	1.22	.044									
MAR	1.63	.054		140		7	120				
APR	2.76	.092		42		4	55				
MAY	3.28	.106									
JUNE	2.53	.084									
JULY	1.77	.057									
AUG	2.10	.068		150		10	80				
SEPT	1.61	.054		160		9	85				
OCT	1.95	.063									
NOV	1.91	.064									
DEC	1.46	.047									
TOTAL	23.68	-	-	-	-		-	-		-	-
AVG.		.065	MAXIMUM	123		7	184				
No. of Samples	-	-	-								





# ANNUAL COSTS



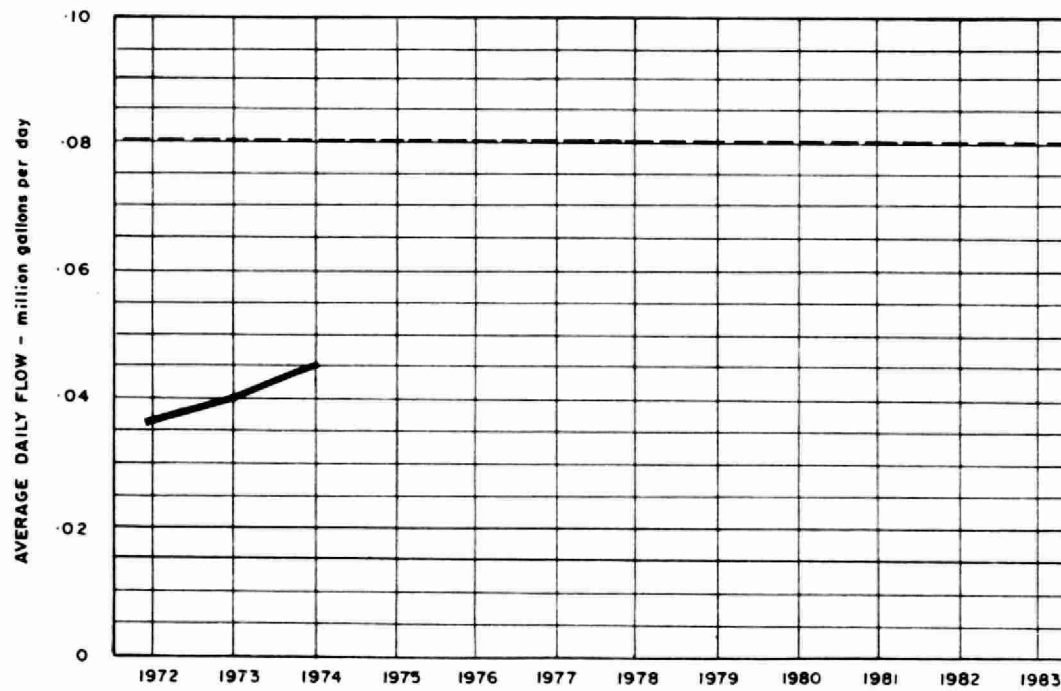
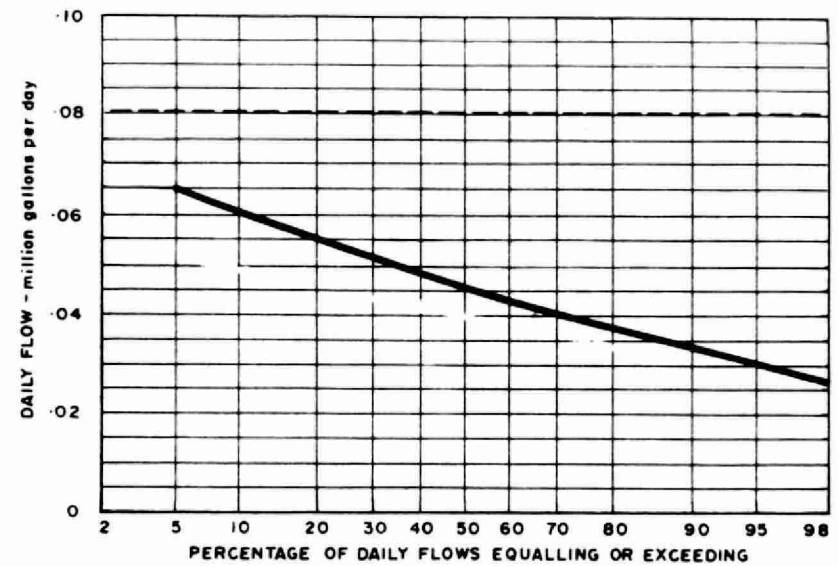
**YEARLY OPERATING COSTS**

YEAR	WATER TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS
			cents /1000 gal.
1974	16.2	22,130	137

# OPERATING EXPENDITURES

Regular Staff	\$	<u>12246</u>	\$	
Casual (Unclassified) Staff		<u>1223</u>		
TOTAL SALARIES AND WAGES				<u>13469</u>
TOTAL EMPLOYEE BENEFITS				<u>1223</u>
TOTAL TRANSPORTATION AND COMMUNICATIONS				<u>1157</u>
Insurance		<u>223</u>		
Sludge Haulage		<u></u>		
Repairs and Maintenance		<u>395</u>		
Other Services		<u>63</u>		
TOTAL SERVICES				<u>681</u>
Machinery and Equipment		<u>124</u>		
Chemicals		<u>2346</u>		
Utilities		<u>287</u>		
Other Supplies and Equipment		<u>2303</u>		
TOTAL SUPPLIES AND EQUIPMENT				<u>5060</u>
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS				<u></u>
TOTAL TRANSFER PAYMENTS				<u></u>
OTHER TRANSACTIONS				<u>540</u>
GRAND TOTAL	GRAND TOTAL		\$	<u>22130</u>

# PROCESS DATA FLOWS



DESIGN CAPACITY - - - - -

## PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	TURBIDITY		COLOUR		TEMPERATURE	
							AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE ° F	MAXIMUM ° F
JAN	1.38	.044	.052		2.4	30	1.0	4.0	6	10	36	36
FEB	1.15	.041	.049		2.6		0.9	1.4			36	36
MAR	1.27	.041	.046		2.8		0.8	1.3			38	39
APR	1.29	.043	.052		4.7	<70	1.0	2.0	3	5	39	43
MAY	1.28	.041	.047		8.0	<70	0.9	1.6	<5	<5	47	51
JUNE	1.42	.047	.067		10.0		1.0	3.5			59	62
JULY	2.01	.065	.099		3.0	40	0.9	1.2	5	<5	68	72
AUG	1.70	.055	.114		7.8	70	0.6	1.5	<5	<5	69	71
SEPT	1.27	.042	.064		4.8	40	0.6	1.4	<5	<5	59	62
OCT	1.20	.039	.048		4.0	40	0.5	1.0	<5	<5	50	53
NOV	1.11	.037	.043		7.8	50	0.6	1.3	<5	<5	43	47
DEC	1.17	.038	.043		2.9	20	0.9	2.3	5	5	37	38
TOTAL	16.25											
AVG.		.045	MAXIMUM .114	MAXIMUM	5.1	40	0.8	MAXIMUM 4.0	<5	MAXIMUM 10	48	MAXIMUM 72

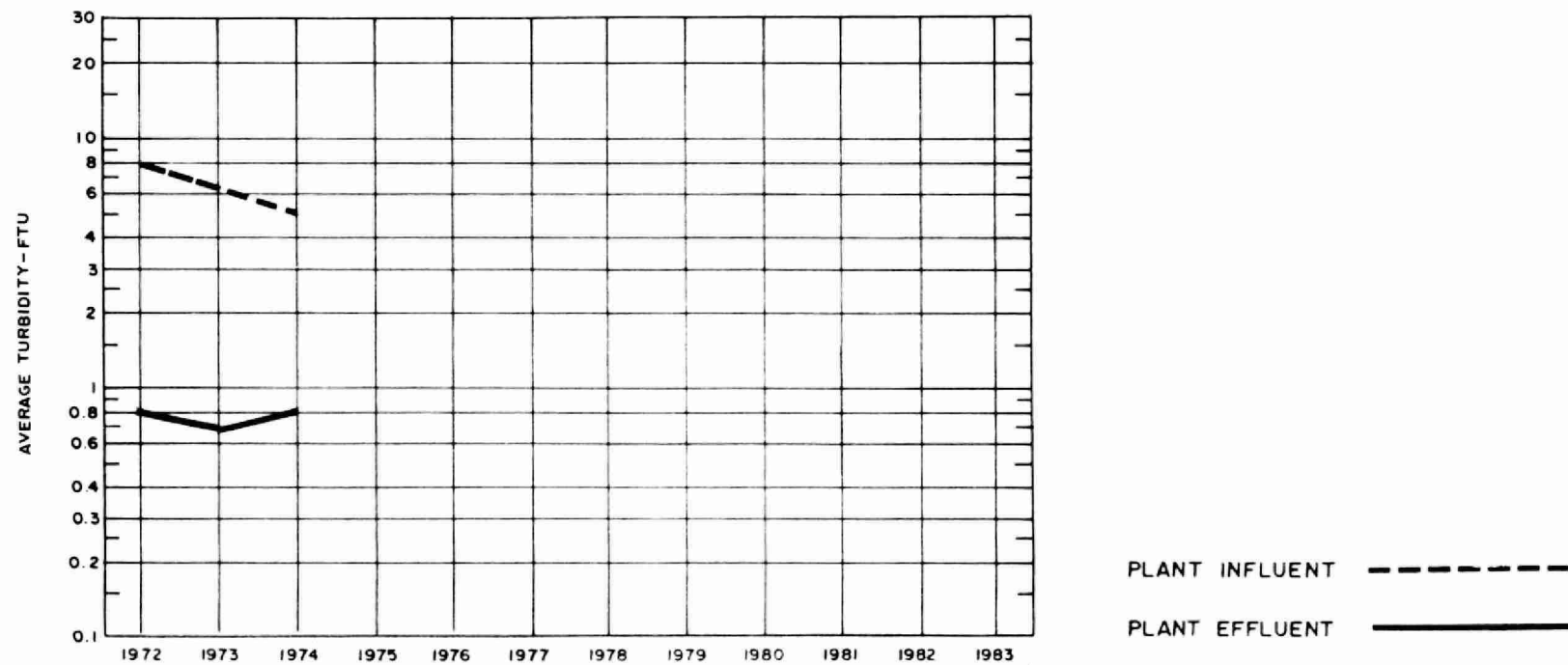
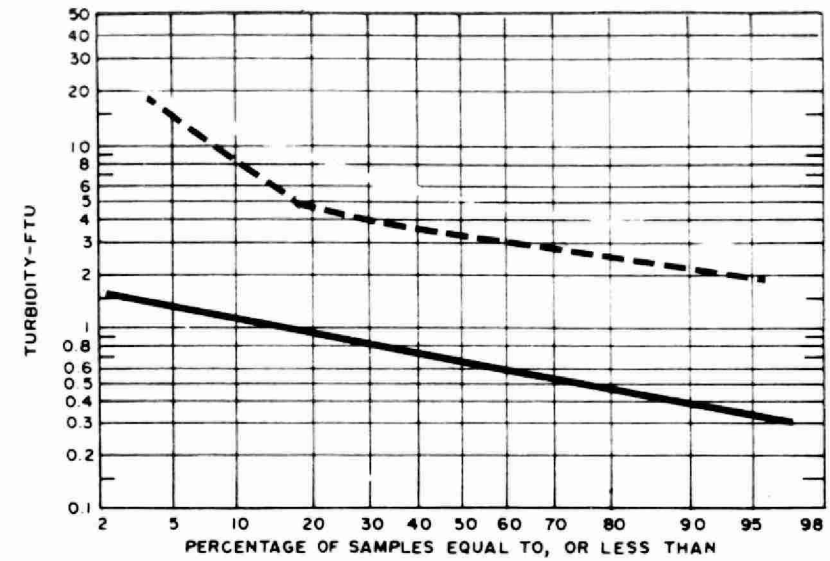
## CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
											PRE - mg/l	POST - mg/l	
	0	1 - 3	4 - 32	33 - 320	> 320								
JAN	0	0	0	0	5	9	0	17	0	79	3.0	1.0	0.8
FEB	0	0	0	1	3	8	0	16	0	73	4.0	1.0	0.8
MAR	0	0	0	0	3	7	0	15	0	87	4.0	1.0	0.7
APR	0	0	0	3	0	5	0	11	0	110	5.0	1.0	0.7
MAY	0	0	0	0	2	5	0	8	0	130	5.0	2.0	0.8
JUNE	0	0	0	0	4	7	0	16	0	123	4.0	2.0	0.7
JULY	2	0	0	0	3	8	0	20	0	194	5.0	2.5	0.9
AUG	0	0	0	0	3	3	0	11	0	150			0.7
SEPT	0	0	0	0	5	8	0	18	0	107			0.9
OCT	0	0	0	0	4	8	0	12	0	89			0.8
NOV	1	0	0	0	2	8	1	14	0	76	4.0	1.5	0.8
DEC	0	0	0	0	3	7	0	12	0	63			0.7
TOTAL	3	0	0	4	37	83	1	170	0	1281			
AVG.	510 (NOTE - Average shown is the GEOMETRIC MEAN)									3 pounds per day	4.3	1.5	0.7

## TREATMENT DATA

MONTH	FILTER OPERATION		CHEMICALS USED					
	AVERAGE FILTER RUN hours	BACKWASH WATER mil. gal.	A L U M		P O L Y M E R		S O D A	A S H
			AMOUNT USED gallons	DOSAGE mg/l	AMOUNT USED pounds	DOSAGE mg/l	AMOUNT USED pounds	DOSAGE mg/l
JAN	6	.108	225	105	5	0.4	1100	80
FEB	4	.126	205	116	5	0.4	800	69
MAR	4	.144	225	115	6	0.5	1000	79
APR			210	106	6	0.5	900	70
MAY	3	.196	235	119	5	0.4	900	70
JUNE			273	125	2	0.1	900	63
JULY	5	.176	255	82	7	0.3	600	30
AUG	6	.126	180	69	7	0.4	1100	65
SEPT		.164	160	82	5	0.4	700	55
OCT		.208	170	92	5	0.4	800	67
NOV		.225	200	117	4	0.4	800	72
DEC		.189	205	114	5	0.4	800	68
TOTAL		1.662	2543		62		10400	
AVG.				102		0.4		64

# TURBIDITY





## WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $\text{CaCO}_3$	10	32	48	24	16	33	48	24	80 - 100
ALKALINITY in mg/l as $\text{CaCO}_3$	11	30	44	21	16	48	67	24	30 - 100
IRON in mg/l Fe	11	.80	4.70	.05	15	<.05	.25	<.05	Less than 0.3
CHLORIDE in mg/l $\text{Cl}^-$	11	2	5	<1	16	8	10	3	Less than 250
pH in pH units	11	7.0	7.5	6.7	16	6.9	7.8	4.7	7.0 - 8.5

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